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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/581,843	06/05/2006	Nicolas Giraud	09669/087001	4605

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EXAMINER
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DOAN, TRANG T

ART UNIT	PAPER NUMBER
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2431

NOTIFICATION DATE	DELIVERY MODE
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01/08/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@oshaliang.com  
buta@oshaliang.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/581,843	<b>Applicant(s)</b> GIRAUD ET AL.	
	<b>Examiner</b> TRANG DOAN	<b>Art Unit</b> 2431	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 October 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 12, 13, 15-18, 20, 22 and 25-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12, 13, 15-18, 20, 22 and 25-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. This action is in response to the amendment filed on 10/22/2009.
2. Claims 12, 20, 22 and 27 have been amended.
3. Claims 1-11, 14, 19, 21, 23-24 and 28 have been canceled.
4. Claims 12-13, 15-18, 20, 22 and 25-27 are pending for consideration.

### ***Continued Examination Under 37 CFR 1.114***

5. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/22/2009 has been entered.

### ***Response to Arguments***

6. Applicant's arguments filed on 10/27/2009 have been fully considered but they are not persuasive.
7. Applicant argues on page 9 of the Remarks that Dwyer does not interrupt program execution if verification of one block fails. Examiner respectfully disagrees. Dwyer does disclose interrupting program execution if verification of one block fails (Dwyer: paragraph 0055: the checksum is verified to make sure that it matches the size

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of each object and the number of elements in the array for the generated checksum...generates an error message of checksum mismatch...and then exits).

8. Applicant further argues on page 9 of the Remarks that Dwyer fails to disclose a pre-calculated checksum that is calculated during compilation. Examiner respectfully disagrees. Dwyer does disclose pre-calculated checksum that is calculated during compilation (Dwyer: paragraphs 0008, 0020 and 0036: compiler 40 containing the checksum code generation mechanism 100 generates a non executable object program 51 that includes checksum code).

9. Examiner notes: Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

10. Applicant's arguments with respect to claims 12-13, 15-18, 20, 22 and 25-27 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 12-13, 15-18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dwyer (US 2004/0015748) (hereinafter Dwyer) in view of Hanaki (US 20030103564) (hereinafter Hanaki).

13. Regarding claim 12, Dwyer discloses a computer-implemented method for verifying execution of a program, wherein the program comprises a first code portion and a second code portion, the method comprising: entering the first code portion, wherein the first code portion comprises a first plurality of instructions (Dwyer: see figures 1-2 and paragraph 0027); executing, by a processor, the first code portion (Dwyer: paragraph 0055: it is determined at step 123 that the next code executed is a statically allocated object, procedure or function call, then at step 131, the executable code process 120 runs the checksum code 130); calculating a first checksum during the execution of the first code portion, wherein the first checksum is calculated using information associated with at least one of the first plurality of instructions (Dwyer: see figures 1-2 and paragraph 0055: the checksum code 130 then proceeds to identify whether the checksum in the statically allocated object...matches the checksum in the array at step 133); comparing the first checksum to a first pre-calculated checksum prior to exiting the first code portion, wherein the first pre-calculated checksum is calculated during compilation of the program (Dwyer: paragraphs 0036, 0039, 0045 and 0055: The checksum code then proceeds to identify whether the checksum in the statically allocated object, procedure or function call matches the checksum in the array at step

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133); exiting the first code portion and entering the second code portion if the first checksum equals the first pre-calculated checksum (Dwyer: paragraphs 0022-0023 and 0056); and detecting an anomaly when the first check checksum is not equal to the first-pre-calculated checksum (Dwyer: paragraphs 0055-0056: generates an error message of checksum mismatch)

Dwyer does not disclose wherein detection of the anomaly results in the second code portion remaining unexecuted. However, Hanaki discloses wherein detection of the anomaly results in the second code portion remaining unexecuted (Hanaki: paragraphs 0231, 0248, 0255, 0268 and 0271). Therefore, it would have been obvious to a person skilled art at the time the invention was made to have included in Dwyer the feature of Hanaki as discussed above to ensure that a process which has experienced an abnormality is executed by another processing unit at an early time, it becomes possible to safely and securely execute a moving picture encoding process. (Hanaki: paragraph 0051).

14. Regarding claim 13, Dwyer as modified further discloses entering the second code portion when the first checksum equals the first pre-calculated checksum, wherein the second code portion comprises a second plurality of instructions (Dwyer: see figure 6; and paragraphs 0055-0056); executing the second code portion (Dwyer: see figure 6; and paragraphs 0055-0056); calculating a second checksum during the execution of the second code portion, wherein the second checksum is calculated using information associated with at least one of the second plurality of instructions (Dwyer: see figure 6; and paragraphs 0055-0056); comparing the second checksum to a second pre-

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calculated checksum prior to exiting the second code portion (Dwyer: see figure 6; and paragraphs 0055-0056); and exiting the second code portion if the second checksum equals the second pre-calculated checksum (Dwyer: see figure 6; and paragraphs 0055-0056).

15. Regarding claim 15, Dwyer as modified further discloses wherein a last instruction in the first plurality of instructions to be executed prior to exiting the first code portion is modified to comparing the first checksum to the first pre-calculated checksum (Dwyer: paragraph 0056).

16. Regarding claim 16, Dwyer as modified further discloses wherein comparing the first checksum to a first pre-calculated checksum is performed after all of the first plurality of instructions have been executed (Dwyer: paragraph 0055).

17. Regarding claim 17, Dwyer as modified further discloses wherein the information associated with the at least one of the first plurality of instructions comprises at least one selected from the group consisting of content of the at least one of the first plurality of instructions, a type of the at least one of the first plurality of instructions, a function performed by the at least one of the first plurality of instructions, and a result generated by executing of the at least one of the first plurality of instructions (Dwyer: see figure 2 and paragraph 0027).

18. Regarding claim 18, Dwyer as modified further discloses wherein the first code portion is bounded by at least one pair selected from the group consisting of an entry point and an exit point, a first jump address and a second jump address, a first branch jump and a second branch jump, a routine call and a corresponding return instruction,

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entry to interruption handling and exit from interruption handling (Dwyer: paragraphs 0029, 0034 and 0055).

19. Regarding claim 20, this claim has limitations that is similar to those of claim 12, thus it is rejected with the same rationale applied against claim 12 above.

20. Claims 22 and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dwyer in view of Shavit et al. (US 5586321) (hereinafter Shavit), and further in view of Hanaki.

21. Regarding claim 22, Dwyer discloses a method for verifying execution of a program, wherein the program comprises a first routine and a second routine, the method comprising: entering the first routine, wherein the first routine comprises a plurality of instructions and each of the plurality of instructions is associated with a value (Dwyer: see figures 1-2 and paragraph 0027); initializing a counter associated with the first routine, prior to executing the first routine (Dwyer: paragraph 0036); executing, by a processor, the first routine, wherein the counter is incremented by the value associated with each of the plurality of instructions executed during the execution of the first routine (Dwyer: see figures 1-2 and paragraph 0040); comparing a value of the counter to a pre-calculated value prior to exiting the first routine (Dwyer: paragraphs 0022, 0039, 0045 and 0055: The checksum code then proceeds to identify whether the checksum in the statically allocated object, procedure or function call matches the checksum in the array at step 133); exiting the first routine and entering the second routine when the value of the counter equals the pre-calculated value (Dwyer: paragraphs 0022 and



0056); and detecting an anomaly when the value of the counter is not equal to the pre-calculated value (Dwyer: paragraph 0020).

Dwyer does not disclose wherein the first routine comprises a first branch and a second branch, and wherein the first branch and the second branch are balanced to have the value of the counter resulting from executing instructions in the first branch equal to the value of the counter resulting from executing instructions in the second branch.

However, Shavit discloses wherein the first routine comprises a first branch and a second branch, and wherein the first branch and the second branch are balanced to have the value of the counter resulting from executing instructions in the first branch equal to the value of the counter resulting from executing instructions in the second branch (Shavit: see figure 5, column 8 lines 25-48 and column 9 lines 32-44).

Therefore, it would have been obvious to a person skilled art at the time the invention was made to have included in Dwyer the feature of Shavit as discussed above because there is thus a widely recognized need for, and it would be highly advantageous to have, apparatus overcoming the above-mentioned disadvantages of shared counters, shared pools, shared stacks and the like in multi-processor environments (Shavit: column 2 lines 17-21).

Dwyer in view of Shavit does not disclose wherein detection of the anomaly results in the second code portion remaining unexecuted. However, Hanaki discloses wherein detection of the anomaly results in the second code portion remaining unexecuted (Hanaki: paragraphs 0231, 0248, 0255, 0268 and 0271). Therefore, it

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would have been obvious to a person skilled art at the time the invention was made to have included in Dwyer in view of Shavit the feature of Hanaki as discussed above to ensure that a process which has experienced an abnormality is executed by another processing unit at an early time, it becomes possible to safely and securely execute a moving picture encoding process. (Hanaki: paragraph 0051).

22. Regarding claim 25, Dwyer as modified discloses wherein the value associated with each of the plurality of instructions is unique (Dwyer: paragraph 0020).

23. Regarding claim 26, Dwyer as modified discloses wherein the value associated with a first one of the plurality of instructions is the same as the value associated with a second one of the plurality of instructions, if a type of the first one of the plurality of instructions is the same as a type of the second one of the plurality of instructions (Dwyer: paragraph 0055).

24. Regarding claim 27, this claim has limitations that is similar to those of claim 22, thus it is rejected with the same rationale applied against claim 22 above.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TRANG DOAN whose telephone number is (571)272-0740. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William R. Korzuch can be reached on (571) 272-7589. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Trang Doan/  
Examiner, Art Unit 2431

/William R. Korzuch/  
Supervisory Patent Examiner, Art Unit 2431